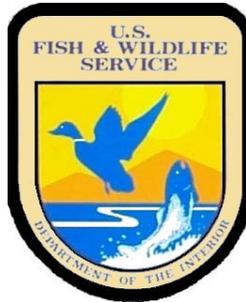


The Road Inventory of Humboldt Bay National Wildlife Refuge Loleta, CA



Prepared By:
Federal Highway Administration
Central Federal Lands Highway Division
April 2012



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INTRODUCTION

The Transportation Equity Act for the 21st Century (Public Law 105-178) created the Refuge Roads Program. Refuge roads are those public roads that provide access to or within a unit of the National Wildlife Refuge System and for which title and maintenance responsibility is vested in the United States Government. Funds from the Highway Trust Fund are available for refuge roads and can be used by the station to pay the cost of:

- (a) Maintenance and improvements of refuge roads.
- (b) Maintenance and improvements of:
 - (1) Adjacent vehicle parking areas
 - (2) Provision for pedestrians and bicycles and
 - (3) Construction and reconstruction of roadside rest areas that are located in or adjacent to wildlife refuges
- (c) Administrative costs associated with such maintenance and improvements.

The funds available for refuge roads are to be disbursed based on the relative needs of the various refuges in the National Wildlife Refuge System, and taking into consideration:

- (a) The comprehensive conservation plan for each refuge;
- (b) The need for access as identified through land use planning; and
- (c) The impact of land use planning on existing transportation facilities.

To determine the relative needs of the U.S. Fish and Wildlife Service, the Federal Highway Administration (FHWA) was asked to inventory all public access roads and parking lots and provide a condition assessment of each. In 2008 the inventory was expanded to include administrative (service use only) roads and parking lots. An FHWA representative meets with refuge personnel to identify route segments and assign route numbers and functional classifications (See Appendix) for each route. All roads and parking lots are mapped using Trimble GPS units and visually assessed for condition using the RSL method of evaluation developed at Utah State University (See Appendix). Culverts, Gates, Guardrails and Low Water Crossings are also mapped and inspected for any obvious defects.

An estimate is provided, in year 2008 dollars, based on the condition determined by the rating system. Estimates are based upon data and location factors from the 2008 RS Means Heavy Construction Cost Data 22nd Annual Edition. Cost estimates should be evaluated on a case-by-case basis when being used for programming purposes.

Native Surfaced roads and parking lots already inventoried will not be re-inventoried and will not appear individually in report chapters 5, 6 and 8. Mileages and areas of native surfaced roads and parking lots will still appear in all summaries in the report and will remain in the road inventory database. In addition to this report, the FHWA will furnish the condition ratings of each route and segment to the Fish and Wildlife Service in a Microsoft Access database so the data can be included in their Real Property Inventory.

Humbolt Bay - 81590

Summaries

Route Miles and Percentages by Functional Class and Condition

Condition Rating (Based on RSL)*

F. C.	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
I	0.00	0.0%	0.00	0.0%	1.30	100.0%	0.00	0.0%	0.00	0.0%	1.30
II	0.71	68.3%	0.33	31.7%	0.00	0.0%	0.00	0.0%	0.00	0.0%	1.04
III	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.74	100.0%	0.00	0.0%	0.74
IV	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
V	1.39	14.2%	8.42	85.8%	0.00	0.0%	0.00	0.0%	0.00	0.0%	9.81
Totals	2.10	16.3%	8.75	67.9%	1.30	10.1%	0.74	5.7%	0.00	0.0%	12.89

*For a description of condition ratings for the various surface types see the Appendix.

Route Miles and Percentages by Surface Type and Condition

Paved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
AS	0.00	0.0%	0.00	0.0%	1.30	100.0%	0.00	0.0%	0.00	0.0%	1.30
CO	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	0.00	0.0%	0.00	0.0%	1.30	100.0%	0.00	0.0%	0.00	0.0%	1.30

Unpaved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
GR	2.10	32.9%	3.55	55.6%	0.00	0.0%	0.74	11.6%	0.00	0.0%	6.39
NA	0.00	0.0%	5.20	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	5.20
PR	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	2.10	18.1%	8.75	75.5%	0.00	0.0%	0.74	6.4%	0.00	0.0%	11.59

Square Footage (Parking Areas)

Condition Rating

Surface	Excellent		Good		Fair		Poor		Failed		Total Square Feet
	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	
AS	0	0.0%	28,529	100.0%	0	0.0%	0	0.0%	0	0.0%	28,529
CO	0	0.0%	554	100.0%	0	0.0%	0	0.0%	0	0.0%	554
GR	0	0.0%	85,084	93.9%	5,515	6.1%	0	0.0%	0	0.0%	90,599
NA	0	0.0%	3,820	100.0%	0	0.0%	0	0.0%	0	0.0%	3,820
PR	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Totals	0	0.0%	117,987	95.5%	5,515	4.5%	0	0.0%	0	0.0%	123,502

Humbolt Bay - 81590 Summaries

Route Miles and Percentages by Use Type and Condition

Road Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
Public (FC I-III)	0.71	23.1%	0.33	10.7%	1.30	42.2%	0.74	24.0%	0.00	0.0%	3.08
Admin (FC IV-V)	1.39	14.2%	8.42	85.8%	0.00	0.0%	0.00	0.0%	0.00	0.0%	9.81
Totals	2.10	16.3%	8.75	67.9%	1.30	10.1%	0.74	5.7%	0.00	0.0%	12.89

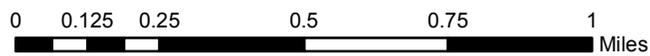
Parking Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		Total Sq Ft
	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	
Public	0	0.0%	90079	94.2%	5515	5.8%	0	0.0%	0	0.0%	95,594
Admin	0	0.0%	27908	100.0%	0	0.0%	0	0.0%	0	0.0%	27,908
Totals	0	0.0%	117,987	95.5%	5,515	4.5%	0	0.0%	0	0.0%	123,502

Humboldt Bay National Wildlife Refuge ROUTE LOCATION MAP



Humboldt Bay National Wildlife Refuge ROUTE LOCATION MAP



Humbolt Bay - 81590 Route Identification List

Shading Color Key:

White = Paved Routes
Yellow = Unpaved Routes

RTE #	Asset Number	ROUTE NAME	RTE MI	ROUTE DESCRIPTION	PAVED MI	UN-PAVED MI	LANES	FC
010	10000116	Refuge Headquarters Entrance Road	1.30	From Eel River Drive to Headquarters Visitor Center Parking (Route 900)	1.30	-	2	1
100	10044444	Hookton Slough Trailhead Access Road	0.11	From Hookton Road to Hookton Slough Trail Parking (Route 901)	-	0.11	2	2
101	10056305	Ma-le'l Dunes Road	0.71	From Young Lane to Ma-le'l Dunes Parking (Route 904)	-	0.71	1	2
102	10044446	Hunter Check Station Road	0.22	From Headquarters Visitor Center Parking (Route 900) to Hunter Check Station Parking (Route 907)	-	0.22	1	2
200	10000118	Lamphere Dunes Access Road	0.74	From Lamphere Road to end of route at refuge boundary	-	0.74	1	3
400	10000119	Salmon Creek Northern Service Loop	3.73	From Shop Parking (Route 800) to end of loop	-	3.73	1	5
401	10000119	Cattail/Salmon Creek Central Access Service Roads	1.92	From Cattail Creek Parking (Route 902) to Cattail/Salmon Creek South Access Service Road (Route 403)	-	1.92	1	5
402	-	Hookton Slough Service Road	2.17	From Cattail/Salmon Creek South Access Service Road (Route 403) to end of route at refuge boundary	-	2.17	1	5
403	10000119	Cattail/Salmon Creek South Access Service Road	1.99	From Salmon Creek Northern Service Loop (Route 400) to end of route at stream	-	1.99	1	5

* Route has more than one Asset Number

Humbolt Bay - 81590
Route Identification List (Parking)

Shading Color Key:

White = Paved Routes
Green = Unpaved Routes

Route #	Asset Number	ROUTE NAME	Area (Sq Ft)	ROUTE DESCRIPTION	Surface Type
800	-	Shop Parking	27,908	From Hunter Check Station Road (Route 102)	Gravel
900	10044445	Headquarters Visitor Center Parking	28,529	From Refuge Headquarters Entrance Road (Route 010)	Asphalt
901	10044448	Hookton Slough Trail Parking	14,782	From Hookton Slough Trailhead Access Road (Route 100)	Gravel
902	10044531	Cattail Creek Parking	3,758	From Refuge Headquarters Entrance Road (Route 010)	Gravel
903	10044445	Headquarters/Visitor Center Handicapped Parking	554	From Refuge Headquarters Entrance Road (Route 010)	Concrete
904	10056307	Ma-le'l Dunes Parking	15,966	From Ma-le'l Dunes Road (Route 101)	Gravel
905	10000123	Lamphere Dunes Parking	3,820	From Lamphere Dunes Access Road (Route 200)	Native
907	10044447	Hunter Check Station Parking	20,792	From Hunter Check Station Road (Route 907)	Gravel
908	-	Salmon Creek Entrance Parking	5,515	From Refuge Headquarters Entrance Road (Route 010)	Gravel
909	-	Ma-le'l Entrance Parking	1,878	From Ma-le'l Dunes Road (Route 101)	Gravel

CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT

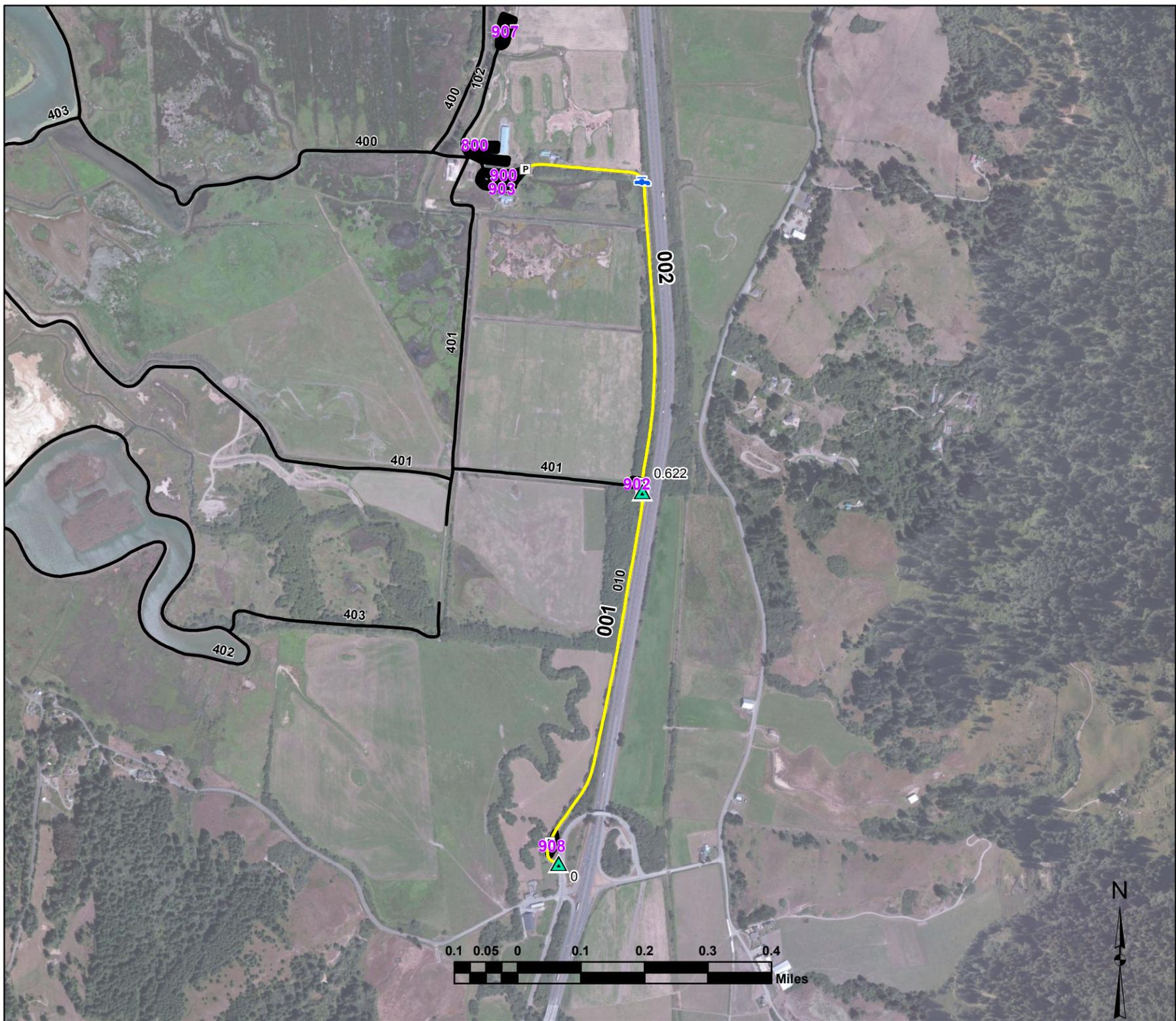
Humbolt Bay NWR

Routes added to previous inventory:			
Rte #	Rte Name	Reason For Addition	
402	Hookton Slough Service Road	New Administrative Route	
403	Cattail/Salmon Creek South Access Service Road	New Administrative Route	
401	Cattail/Salmon Creek Central Access Service Roads	New Administrative Route	
400	Salmon Creek Northern Service Loop	New Administrative Route	
102	Hunter Check Station Road	New Public Route	
200	Lamphere Dunes Access Road	New Public Route	
908	Salmon Creek Entrance Parking	New Public Route	
800	Shop Parking	New Administrative Route	
907	Hunter Check Station Parking	New Public Route	
905	Lamphere Dunes Parking	New Public Route	
909	Ma-le'l Entrance Parking	New Public Route	

Routes removed from previous inventory:		
Rte #	Rte Name	Reason For Removal

Routes modified from previous inventory:			
Rte #	Rte Name	Type of Modification	Description of Modification
010	Refuge Headquarters Entrance Road	New Geometry, and Name	Removed Route 011 and made it all one road, on refuges staffs recommendation
101	Ma-le'l Dunes Road	New Geometry	First section has been re-build since previous inventory and is now wider
904	Ma-le'l Dunes Parking	New Geometry	Corrected Cycle 3 collection error
902	Cattail Creek Parking	Renamed	Formerly Access Road Gate Parking. Renamed to clarify for refuge staff

Comments:



Parking 900 Other FWS roads	Gate Admin Bldg Begin Section	Boat Ramp Guardrail Fee Station	Visitor Center Intersection Obstacle	Features * Problem Area • Political Boundary • Railroad Xing • Other	Turnout/Parking Bridge Deficiency Culvert Low_Water_Crossing Water_Control_Structure	Condition: Excellent Good Fair Poor Failed
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Refuge Headquarters Entrance Road

From Eel River Drive to Headquarters Visitor Center Parking (Route 900)

Route Number: 010

Total Route Mileage: 1.30

Asset Number	10000116	10000116			
Section Number	001	002			
Section Length (miles)	0.62	0.68			
Inspection Date	02-27-2012	02-27-2012			
Surface Type	Asphalt	Asphalt			
Number of Lanes	2	2			
Roadway Width (feet)	22	22			
Condition	Fair	Fair			
Remaining Service Life (years)	8	10			
Estimated Cost to Repair	\$81,200	\$89,100			
Current Replacement Value	\$899,500	\$986,500			

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.05						
Gate	001-0.62						
Begin Section	002-0.62						
Culvert	002-0.63						
Gate	002-0.63						
Turnout/Parking	002-0.63						
Water Control Structure	002-1.08						
Turnout/Parking	002-1.31						



Parking 900	Gate	Boat Ramp	Visitor Center	Features * Problem Area	Turnout/Parking	Culvert	Condition: Excellent
Other FWS roads	Admin Bldg	Guardrail	Intersection	Political Boundary	Bridge	Low_Water_Crossing	Good
	Begin Section	Fee Station	Obstacle	Railroad Xing	Deficiency	Water_Control_Structure	Fair
				Other			Poor
							Failed

Hookton Slough Trailhead Access Road

From Hookton Road to Hookton Slough Trail Parking (Route 901)

Route Number: 100

Total Route Mileage: 0.11

Asset Number	10044444				
Section Number	001				
Section Length (miles)	0.11				
Inspection Date	02-28-2012				
Surface Type	Gravel				
Number of Lanes	2				
Roadway Width (feet)	16				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	\$200				
Current Replacement Value	\$92,000				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.01						
Turnout/Parking	001-0.11						



Parking 900 Other FWS roads	Gate Admin Bldg Begin Section	Boat Ramp Guardrail Fee Station	Visitor Center Intersection Obstacle	Features Problem Area Political Boundary Railroad Xing Other	Turnout/Parking Bridge Deficiency Culvert Low_Water_Crossing Water_Control_Structure	Condition: Excellent Good Fair Poor Failed
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Ma-le'i Dunes Road

From Young Lane to Ma-le'i Dunes Parking (Route 904)

Route Number: 101

Total Route Mileage: 0.71

Asset Number	10056305	10056305			
Section Number	001	002			
Section Length (miles)	0.44	0.27			
Inspection Date	02-27-2012	02-27-2012			
Surface Type	Gravel	Gravel			
Number of Lanes	1	1			
Roadway Width (feet)	14	14			
Condition	Excellent	Excellent			
Remaining Service Life (years)	9	9			
Estimated Cost to Repair	\$0	\$0			
Current Replacement Value	\$368,000	\$225,800			

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.04						
Gate	001-0.07						
Gate	001-0.44						
Begin Section	002-0.44						
Turnout/Parking	002-0.71						



Parking 900 Other FWS roads	Gate Admin Bldg Begin Section	Boat Ramp Guardrail Fee Station	Visitor Center Intersection Obstacle	Features Problem Area Political Boundary Railroad Xing Other	Turnout/Parking Bridge Deficiency	Culvert Low_Water_Crossing Water_Control_Structure	Condition: Excellent Good Fair Poor Failed
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Hunter Check Station Road

From Headquarters Visitor Center Parking (Route 900) to Hunter Check Station Parking (Route 907)

Route Number: 102

Total Route Mileage: 0.22

Asset Number	10044446				
Section Number	001				
Section Length (miles)	0.22				
Inspection Date	02-27-2012				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	14				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	\$400				
Current Replacement Value	\$184,000				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.03						
Intersection	001-0.04						
Water Control Structure	001-0.21						
Turnout/Parking	001-0.23						



Parking 900 Other FWS roads	Gate Admin Bldg Begin Section	Boat Ramp Guardrail Fee Station	Visitor Center Intersection Obstacle	Features Problem Area Political Boundary Railroad Xing Other	Turnout/Parking Bridge Deficiency	Culvert Low_Water_Crossing Water_Control_Structure	Condition: Excellent Good Fair Poor Failed
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Lamphere Dunes Access Road

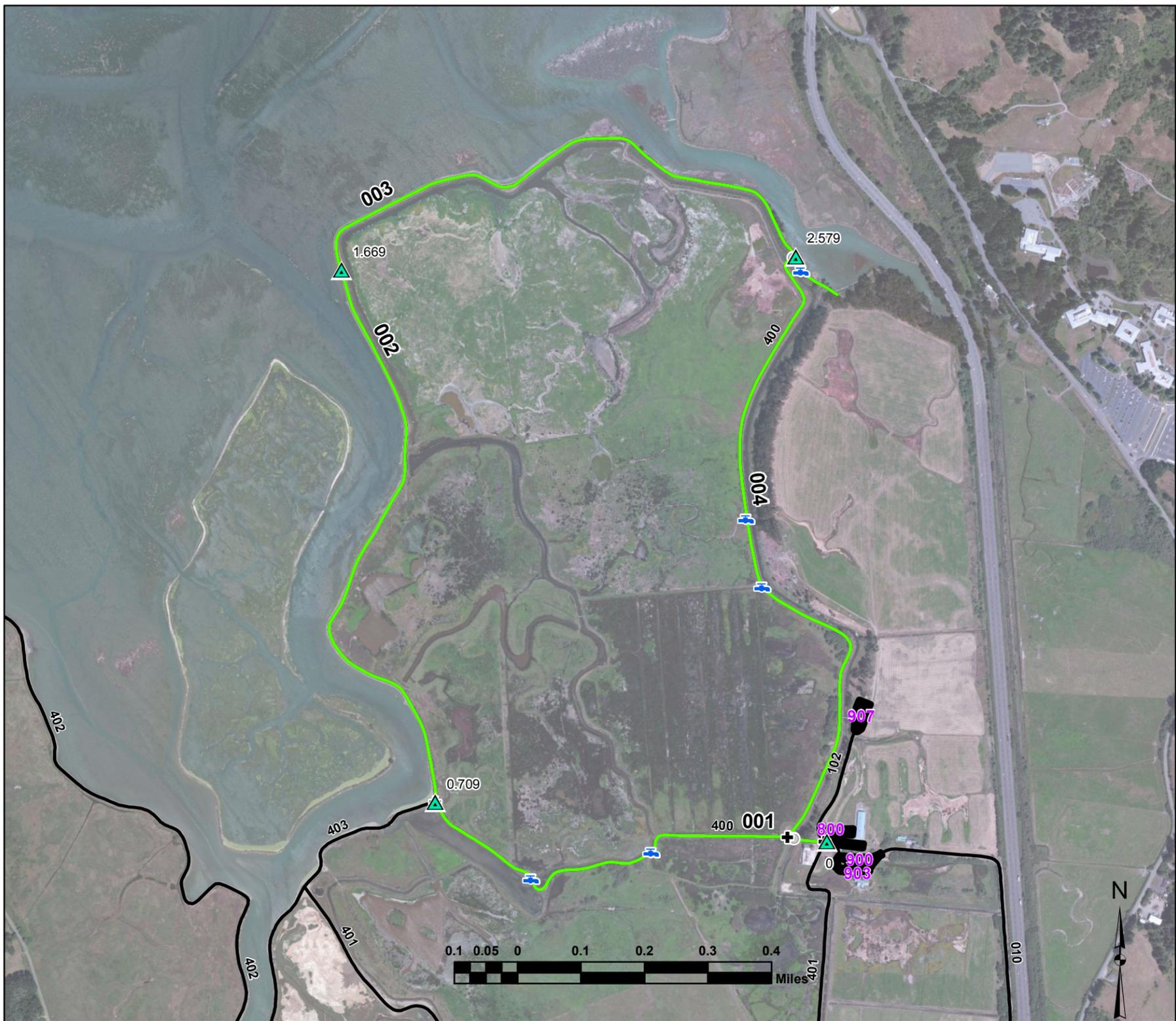
From Lamphere Road to end of route at refuge boundary

Route Number: 200

Total Route Mileage: 0.74

Asset Number	10000118				
Section Number	001				
Section Length (miles)	0.74				
Inspection Date	02-27-2012				
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	12				
Condition	Poor				
Remaining Service Life (years)	2				
Estimated Cost to Repair	\$114,600				
Current Replacement Value	\$618,800				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.01						
Turnout/Parking	001-0.43						



Parking 900	Gate	Boat Ramp	Visitor Center	Features * Problem Area • Political Boundary • Railroad Xing • Other	Turnout/Parking	Culvert	Condition: Excellent Good Fair Poor Failed
Other FWS roads	Admin Bldg	Guardrail	Intersection	Obstacle	Bridge	Low_Water_Crossing	
	Begin Section	Fee Station			Deficiency	Water_Control_Structure	

Salmon Creek Northern Service Loop

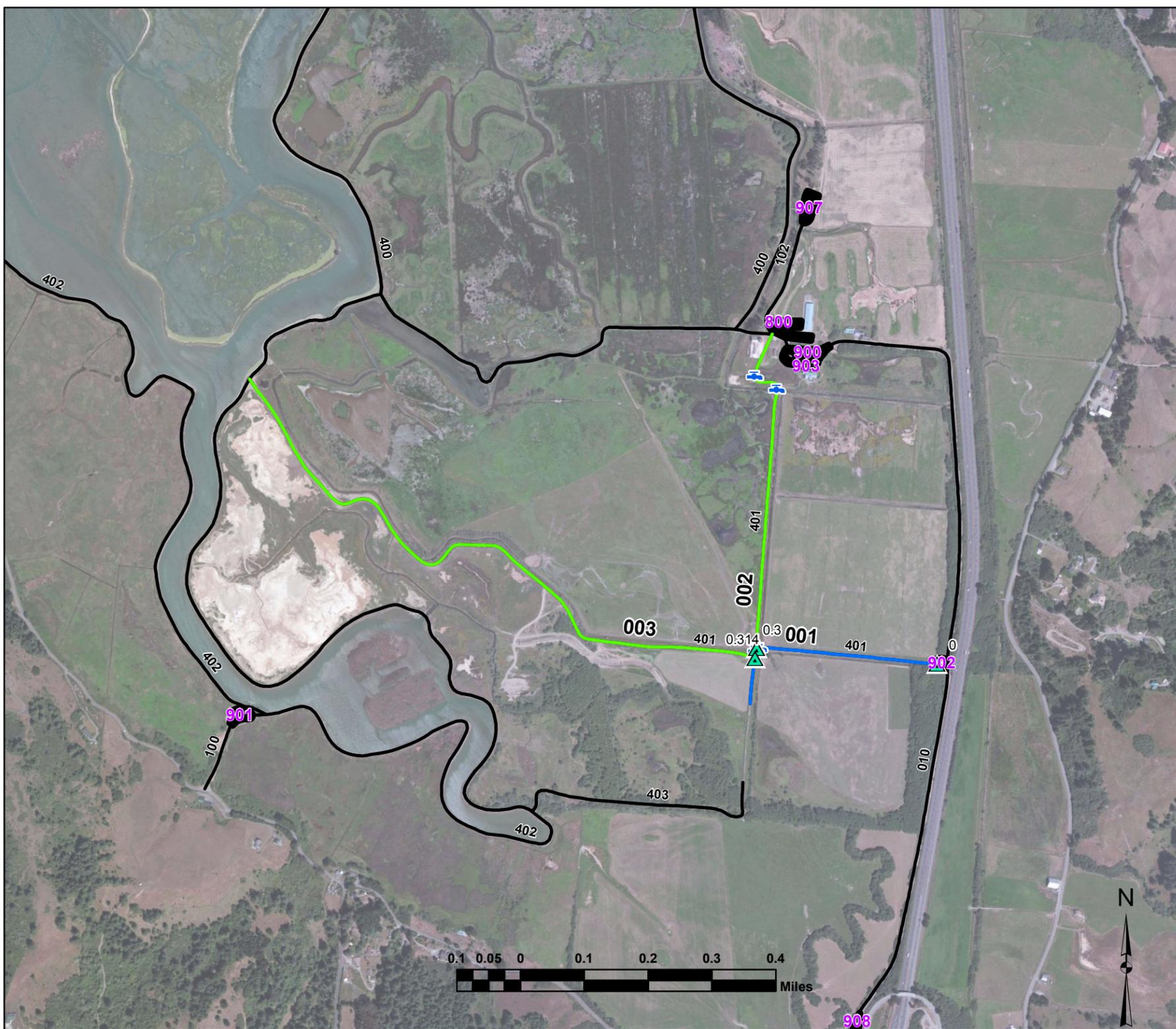
From Shop Parking (Route 800) to end of loop

Route Number: 400

Total Route Mileage: 2.67

Asset Number	10000119	10000119	10000119	10000119
Section Number	001	002	003	004
Section Length (miles)	0.71	0.96	1.00	1.06
Inspection Date	02-28-2012	02-28-2012	02-28-2012	02-28-2012
Surface Type	Gravel	Native	Native	Native
Number of Lanes	1	1	1	1
Roadway Width (feet)	12	12	12	12
Condition	Good	Good	Good	Good
Remaining Service Life (years)	7	5	5	5
Estimated Cost to Repair	\$1,400	\$2,000	\$2,100	\$2,200
Current Replacement Value	\$593,700	\$415,300	\$432,600	\$458,600

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Intersection	001-0.0						
Culvert	001-0.05						
Intersection	001-0.07						
Water Control Structure	001-0.3						
Water Control Structure	001-0.52						
Intersection	001-0.71						
Begin Section	002-0.71						
Begin Section	003-1.67						
Water Control Structure	003-2.6						
Begin Section	004-2.58						
Culvert	004-2.58						
Water Control Structure	004-3.02						
Water Control Structure	004-3.13						



Parking 900	Gate	Boat Ramp	Visitor Center	Features * Problem Area	Turnout/Parking	Culvert	Condition: Excellent Good Fair Poor Failed
Other FWS roads	Admin Bldg	Guardrail	Intersection	Political Boundary	Bridge	Low_Water_Crossing	
	Begin Section	Fee Station	Obstacle	Railroad Xing	Deficiency	Water_Control_Structure	
				Other			

Cattail/Salmon Creek Central Access Service Roads

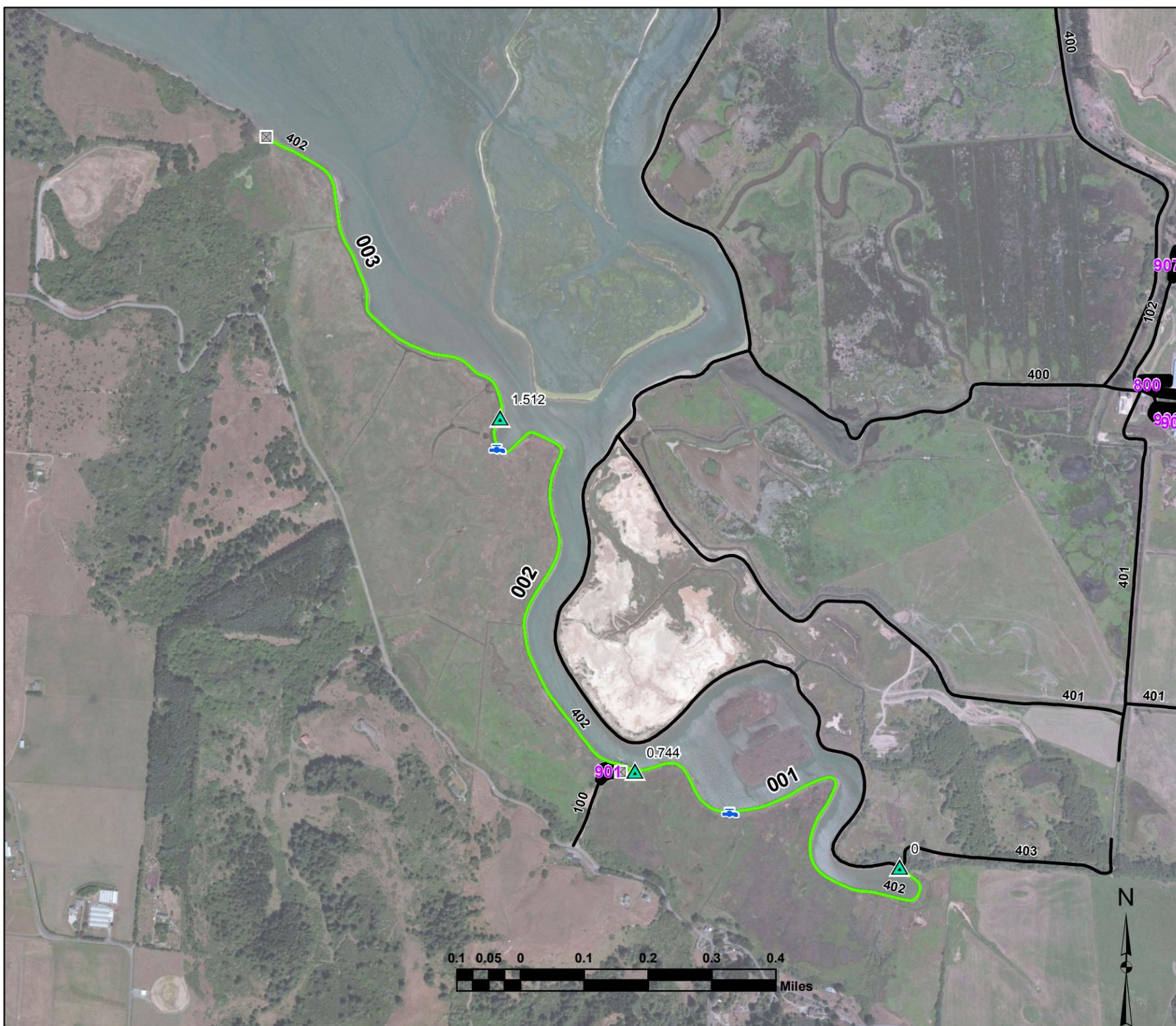
From Cattail Creek Parking (Route 902) to Cattail/Salmon Creek South Access Service Road (Route 403)

Route Number: 401

Total Route Mileage: 1.92

Asset Number	10000119	10000119	10000119		
Section Number	001	002	003		
Section Length (miles)	0.37	0.53	1.02		
Inspection Date	02-28-2012	02-28-2012	02-28-2012		
Surface Type	Gravel	Native	Native		
Number of Lanes	1	1	1		
Roadway Width (feet)	12	12	12		
Condition	Excellent	Good	Good		
Remaining Service Life (years)	9	7	7		
Estimated Cost to Repair	\$0	\$1,100	\$2,100		
Current Replacement Value	\$309,400	\$229,300	\$441,300		

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.0						
Gate	001-0.3						
Water Control Structure	001-0.3						
Water Control Structure	001-0.3						
Begin Section	002-0.3						
Water Control Structure	002-0.7						
Water Control Structure	002-0.76						
Begin Section	003-0.31						



Parking 900	Gate	Boat Ramp	Visitor Center	Features Problem Area	Turnout/Parking	Culvert	Condition: Excellent
Other FWS roads	Admin Bldg	Guardrail	Intersection	Political Boundary	Bridge	Low_Water_Crossing	Good
	Begin Section	Fee Station	Obstacle	Railroad Xing	Deficiency	Water_Control_Structure	Fair
				Other			Poor
							Failed

Hookton Slough Service Road

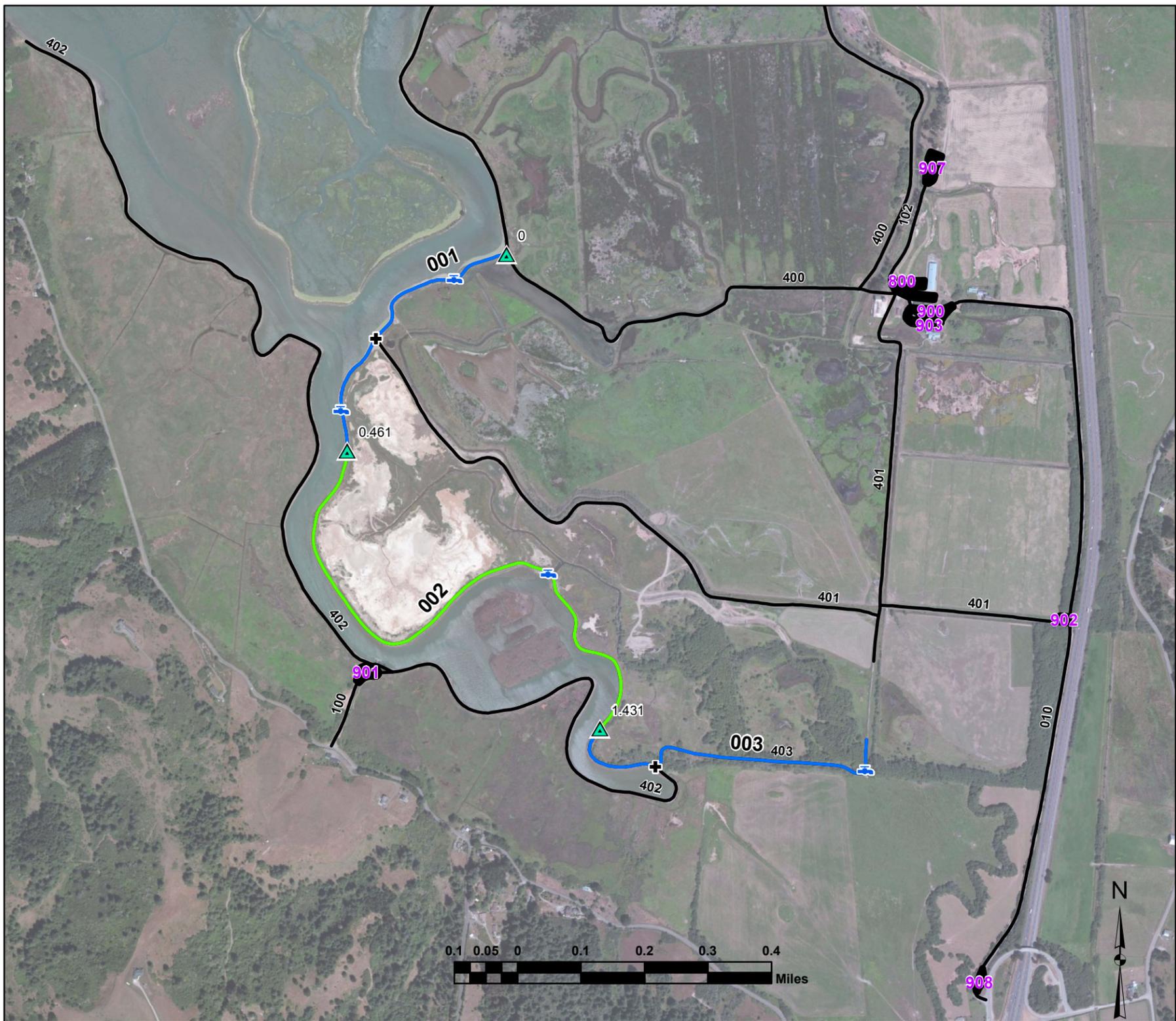
From Cattail/Salmon Creek South Access Service Road (Route 403) to end of route at refuge boundary

Route Number: 402

Total Route Mileage: 2.17

Asset Number	-	-	-
Section Number	001	002	003
Section Length (miles)	0.77	0.77	0.63
Inspection Date	02-28-2012	02-28-2012	02-28-2012
Surface Type	Gravel	Gravel	Native
Number of Lanes	1	1	1
Roadway Width (feet)	12	12	12
Condition	Good	Good	Good
Remaining Service Life (years)	7	7	5
Estimated Cost to Repair	\$1,500	\$1,500	\$1,300
Current Replacement Value	\$643,900	\$643,900	\$272,500

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.55						
Gate	001-0.77						
Begin Section	002-0.74						
Water Control Structure	002-1.46						
Begin Section	003-1.51						
Gate	003-2.14						



Parking 900 Other FWS roads	Gate Admin Bldg Begin Section	Boat Ramp Guardrail Fee Station	Visitor Center Intersection Obstacle	Features Problem Area Political Boundary Railroad Xing Other	Turnout/Parking Bridge Deficiency	Culvert Low_Water_Crossing Water_Control_Structure	Condition: Excellent Good Fair Poor Failed
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Cattail/Salmon Creek South Access Service Road

From Salmon Creek Northern Service Loop (Route 400) to end of route at stream

Route Number: 403

Total Route Mileage: 1.99

Asset Number	10000119	10000119	10000119		
Section Number	001	002	003		
Section Length (miles)	0.46	0.97	0.56		
Inspection Date	02-28-2012	02-28-2012	02-28-2012		
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	1	1	1		
Roadway Width (feet)	12	12	12		
Condition	Excellent	Good	Excellent		
Remaining Service Life (years)	8	5	8		
Estimated Cost to Repair	\$0	\$1,900	\$0		
Current Replacement Value	\$384,700	\$811,200	\$468,300		

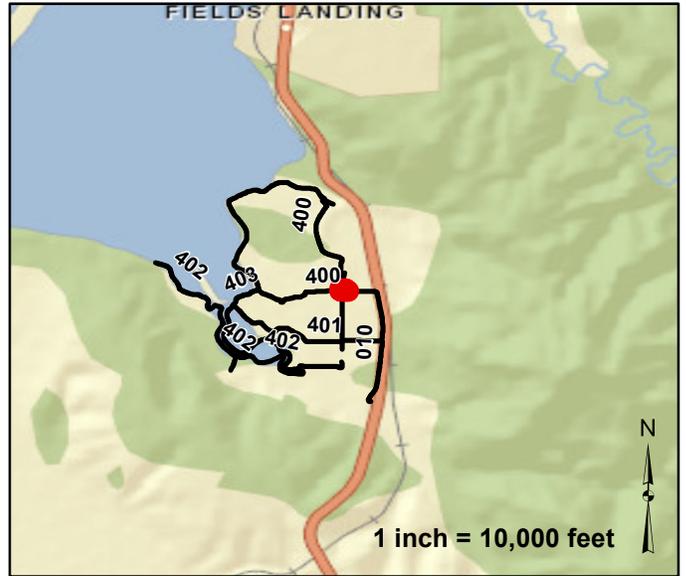
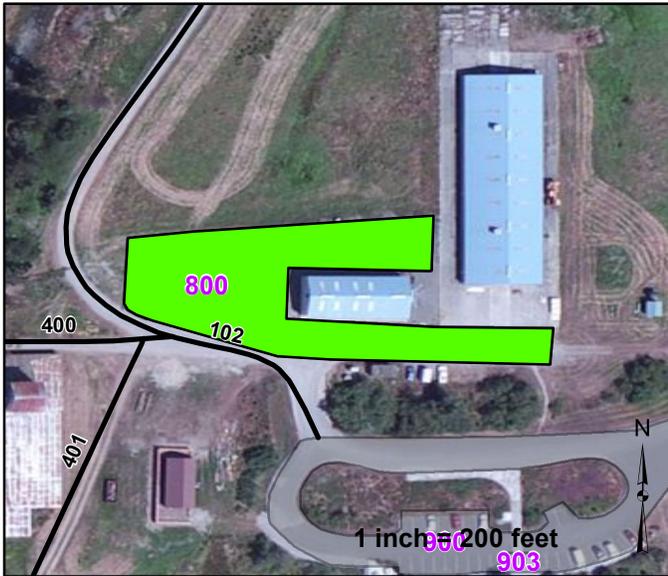
Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Water Control Structure	001-0.1						
Intersection	001-0.28						
Water Control Structure	001-0.4						
Begin Section	002-0.46						
Water Control Structure	002-1.13						
Begin Section	003-1.43						
Intersection	003-1.58						
Water Control Structure	003-1.96						

Route Number:800

Shop Parking

From Hunter Check Station Road (Route 102)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	27908	Good	Gravel	\$5,100	02-27-2012	\$167,500



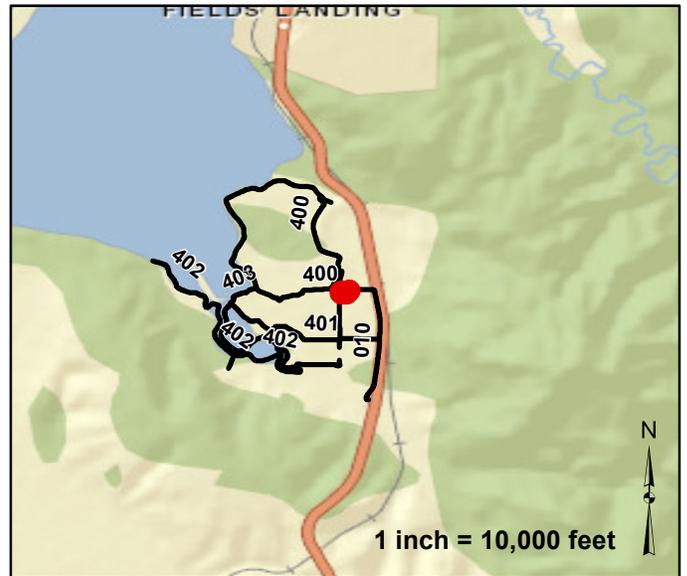
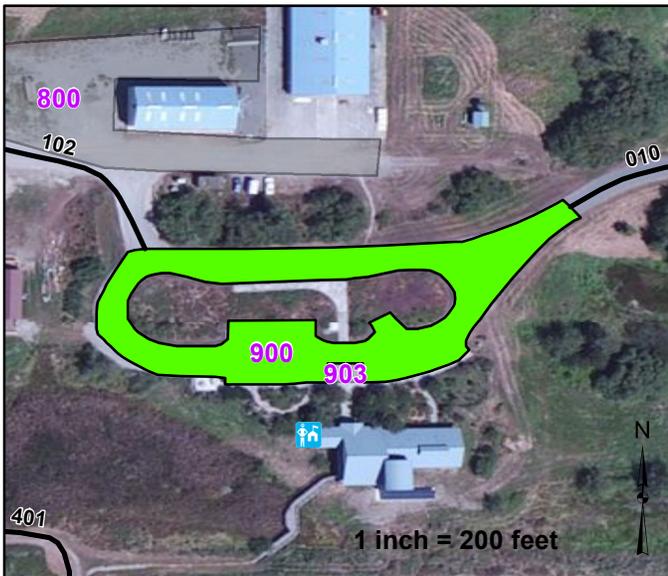
Parking		Features				Condition:	
Other FWS roads	Admin Bldg	Guardrail	Other	Low_Water_Crossing			
	Begin Section	Fee Station	Problem Area	Water_Control_Structure			

Route Number:900

Headquarters Visitor Center Parking

From Refuge Headquarters Entrance Road (Route 010)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10044445	28529	Good	Asphalt	\$6,400	02-27-2012	\$313,800



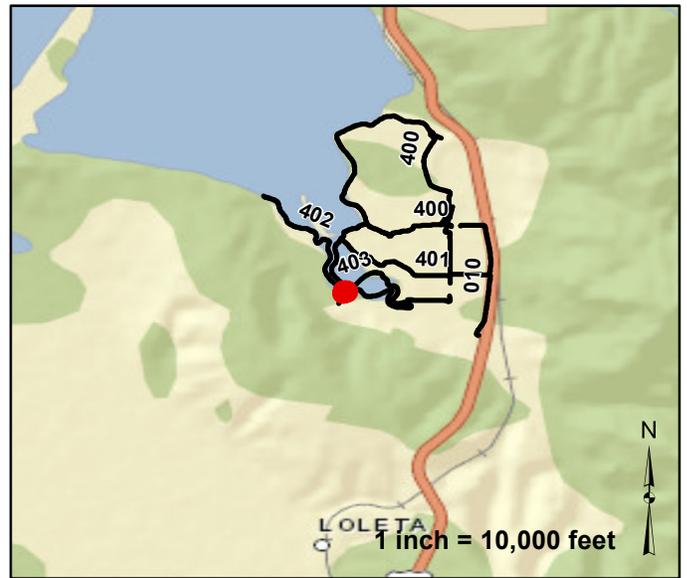
Parking	Gate	Features	Visitor Center	Culvert	Condition:
Other FWS roads	Admin Bldg	Boat Ramp	Other	Low_Water_Crossing	Excellent
	Begin Section	Guardrail	Problem Area	Water_Control_Structure	Good
		Fee Station			Fair
					Poor
					Failed

Route Number:901

Hookton Slough Trail Parking

From Hookton Slough Trailhead Access Road (Route 100)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10044448	14782	Good	Gravel	\$2,700	02-27-2012	\$88,700

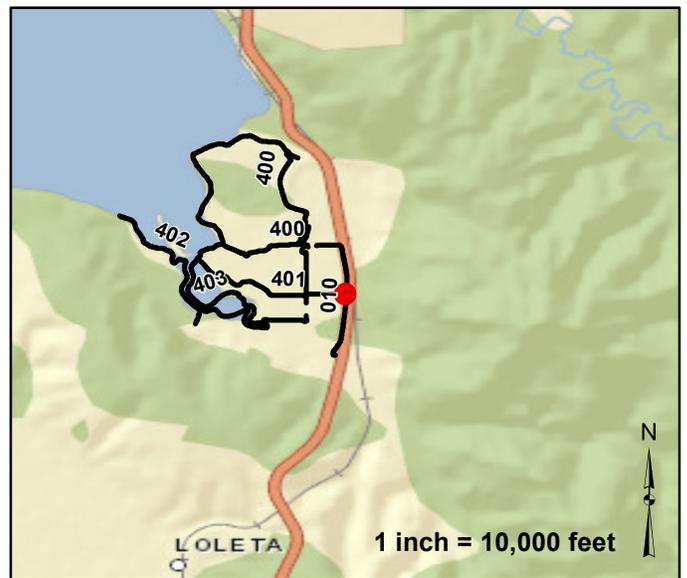


Parking		Features				Condition:	
						Excellent	
Other FWS roads						Good	
						Fair	
						Poor	
						Failed	

Route Number:902 Cattail Creek Parking

From Refuge Headquarters Entrance Road (Route 010)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10044531	3758	Good	Gravel	\$700	02-27-2012	\$22,600



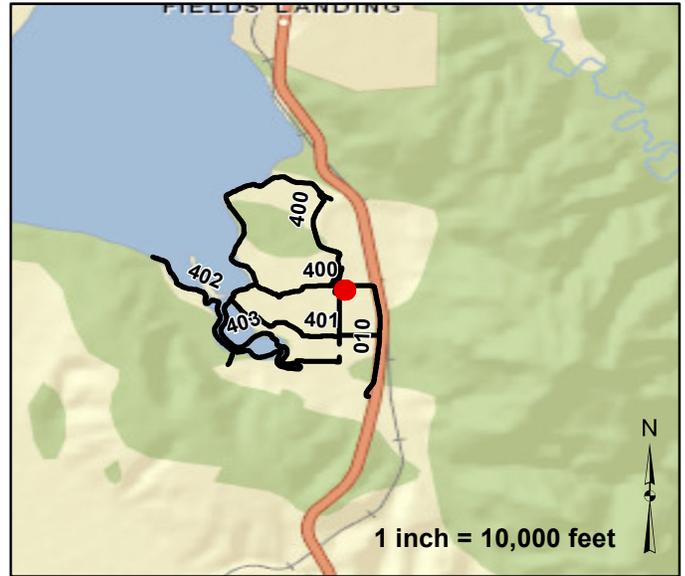
Parking		Features				Condition:	
						Excellent	
Other FWS roads						Good	
						Fair	
						Poor	
						Failed	

Route Number:903
Headquarters/Visitor Center Handicapped Parking
 From Refuge Headquarters Entrance Road (Route 010)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10044445	554	Good	Concrete	\$100	02-27-2012	\$7,400



No Photo Available



<p>Parking</p> <p>900</p> <p>Other FWS roads</p>	<p> Gate</p> <p> Admin Bldg</p> <p> Begin Section</p>	<p>Features</p> <p> Boat Ramp</p> <p> Guardrail</p> <p> Fee Station</p>	<p> Visitor Center</p> <p> Other</p> <p> Problem Area</p>	<p> Culvert</p> <p> Low Water Crossing</p> <p> Water Control Structure</p>	<p>Condition:</p> <p> Excellent</p> <p> Good</p> <p> Fair</p> <p> Poor</p> <p> Failed</p>
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Route Number:904 Ma-le'i Dunes Parking

From Ma-le'i Dunes Road (Route 101)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10056307	15966	Good	Gravel	\$2,900	02-27-2012	\$95,800

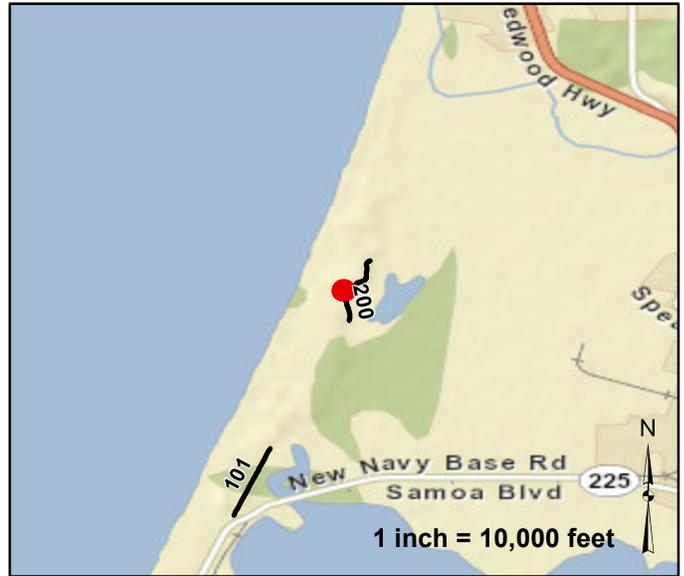


Parking		Features				Condition:	
						Excellent	
Other FWS roads						Good	
						Fair	
						Poor	
						Failed	

Route Number:905 Lamphere Dunes Parking

From Lamphere Dunes Access Road (Route 200)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10000123	3820	Good	Native	\$700	02-27-2012	\$9,900



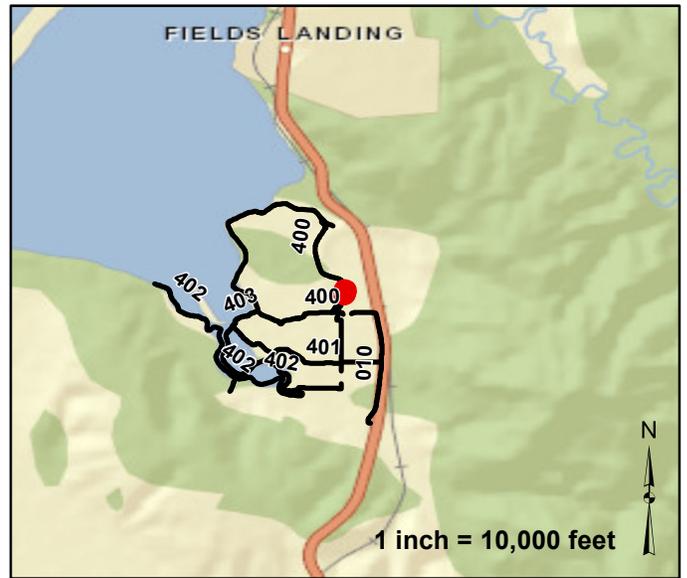
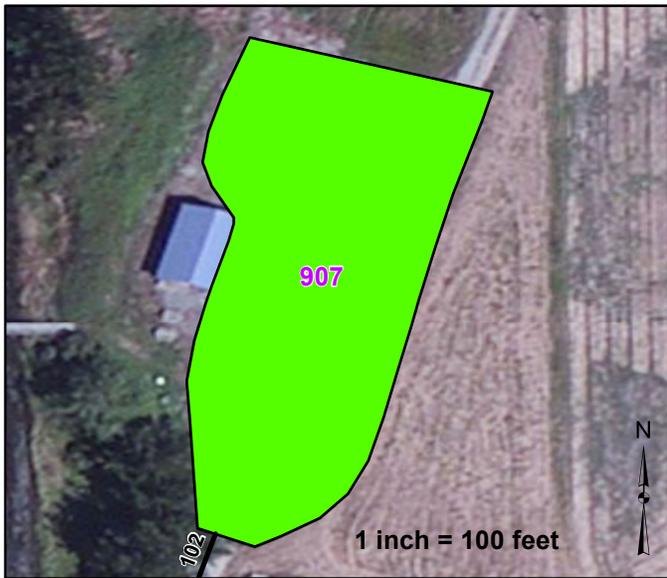
Parking		Features				Condition:	
						Excellent	
Other FWS roads	Admin Bldg	Guardrail	Other	Low_Water_Crossing		Good	
	Begin Section	Fee Station	Problem Area	Water_Control_Structure		Fair	
						Poor	
						Failed	

Route Number:907

Hunter Check Station Parking

From Hunter Check Station Road (Route 907)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10044447	20792	Good	Gravel	\$3,800	02-27-2012	\$124,800



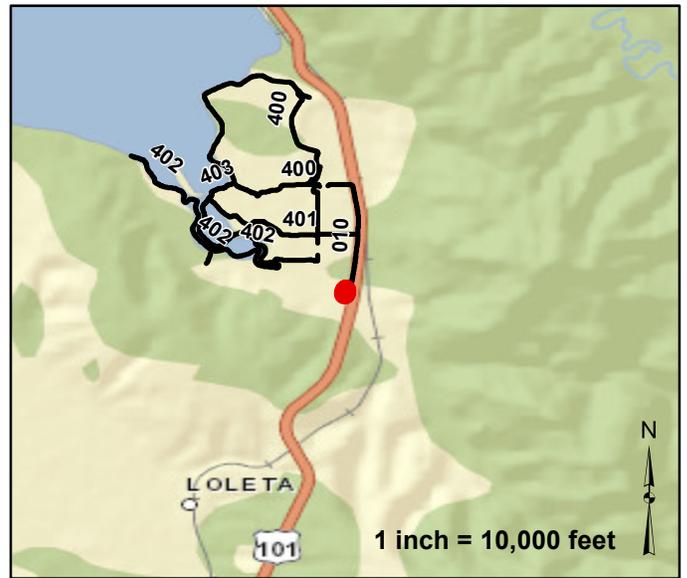
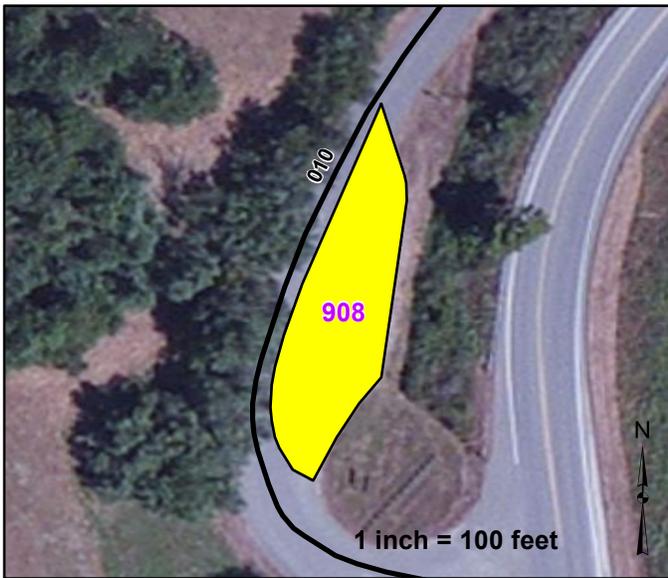
Parking	Features				Condition:
	Gate	Boat Ramp	Visitor Center	Culvert	Excellent
Other FWS roads	Admin Bldg	Guardrail	Other	Low Water Crossing	Good
	Begin Section	Fee Station	Problem Area	Water Control Structure	Fair
					Poor
					Failed

Route Number:908

Salmon Creek Entrance Parking

From Refuge Headquarters Entrance Road (Route 010)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	5515	Fair	Gravel	\$1,800	02-27-2012	\$33,100



Parking		Features				Condition:	
						Excellent	
Other FWS roads						Good	
						Fair	
						Poor	
						Failed	

Route Number:909

Ma-le'I Entrance Parking

From Ma-le'I Dunes Road (Route 101)

Asset Number	Area	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	1878	Good	Gravel	\$300	02-27-2012	\$11,300



Parking		Features				Condition:	
Other FWS roads	Gate	Boat Ramp	Visitor Center	Culvert	Excellent	Good	Fair
	Admin Bldg	Guardrail	Other	Low_Water_Crossing	Fair	Poor	Failed
	Begin Section	Fee Station	Problem Area	Water_Control_Structure			

Humbolt Bay Bridge Inventory					
Rte #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
No Bridges to Report					

ROUTE: 010

Features Photographs



Photo: HUBA_C4_1586 Route: 010-001-0.0
Begin Section



Photo: HUBA_C4_1589 Route: 010-001-0.62
Metal Open Rail Gate
Asset# 10000122



Photo: HUBA_C4_1590 Route: 010-002-0.62
Begin Section



Photo: HUBA_C4_1592 Route: 010-002-0.63
Concrete Culvert Box 24ft long 6ft x 10ft 1ft deep
Asset# NA



Photo: HUBA_C4_1593 Route: 010-002-0.63
Concrete Culvert Box 24ft long 6ft x 10ft 1ft deep
Asset# NA



Photo: HUBA_C4_1591 Route: 010-002-0.63
Metal Cattle Guard
Asset# 10000122

ROUTE: 010

Features Photographs



Photo: HUBA_C4_1594 Route: 010-002-1.08
Metal WCS Flashboard Riser 40ft long 48in dia. 3ft deep
Asset# NA



Photo: HUBA_C4_1595 Route: 010-002-1.08
Metal WCS Flashboard Riser 40ft long 48in dia. 3ft deep
Asset# NA

ROUTE: 100

Features Photographs



Photo: HUBA_C4_1726 Route: 100-001-0.0
Begin Section



Photo: HUBA_C4_1727 Route: 100-001-0.01
Metal Open Rail Gate
Asset# 10000122

ROUTE: 101

Features Photographs



Photo: HUBA_C4_1513 Route: 101-001-0.0
Begin Section



Photo: HUBA_C4_1514 Route: 101-001-0.07
Metal Open Rail Gate
Asset# 10000122



Photo: HUBA_C4_1515 Route: 101-001-0.44
Metal Open Rail Gate
Asset# 10000122



Photo: HUBA_C4_1516 Route: 101-002-0.44
Begin Section

ROUTE: 102

Features Photographs



Photo: HUBA_C4_1598 Route: 102-001-0.0
Begin Section



Photo: HUBA_C4_1599 Route: 102-001-0.21
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep
Asset# NA



Photo: HUBA_C4_1600 Route: 102-001-0.21
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep
Asset# NA

ROUTE: 200

Features Photographs



Photo: HUBA_C4_1519 Route: 200-001-0.0
Begin Section



Photo: HUBA_C4_1520 Route: 200-001-0.01
Metal Open Rail Gate
Asset# 10000122

ROUTE: 400

Features Photographs



Photo: HUBA_C4_1672 Route: 400-001-0.0
Begin Section



Photo: HUBA_C4_1673 Route: 400-001-0.05
Plastic Culvert 40ft long 48in dia. 2ft deep
Asset# 10000105



Photo: HUBA_C4_1674 Route: 400-001-0.05
Plastic Culvert 40ft long 48in dia. 2ft deep
Asset# 10000105



Photo: HUBA_C4_1675 Route: 400-001-0.3
Metal WCS Flashboard Riser 50ft long 24in dia. 2ft deep
Asset# NA



Photo: HUBA_C4_1676 Route: 400-001-0.3
Metal WCS Flashboard Riser 50ft long 24in dia. 2ft deep
Asset# NA



Photo: HUBA_C4_1677 Route: 400-001-0.52
Concrete WCS Flashboard Riser 15ft long 1ft deep
4x4 Box Culvert Asset# 10036311 8-007

ROUTE: 400

Features Photographs



Photo: HUBA_C4_1678 Route: 400-001-0.52
Concrete WCS Flashboard Riser 15ft long 1ft deep
4x4 Box Culvert Asset# 10036311



Photo: HUBA_C4_1680 Route: 400-002-0.71
Begin Section



Photo: HUBA_C4_1681 Route: 400-003-1.67
Begin Section



Photo: HUBA_C4_1682 Route: 400-003-2.6
Metal WCS Flashboard Riser 30ft long 1ft deep
6x10 Box Culvert Asset# NA



Photo: HUBA_C4_1683 Route: 400-003-2.6
Metal WCS Flashboard Riser 30ft long 1ft deep
6x10 Box Culvert Asset# NA



Photo: HUBA_C4_1685 Route: 400-004-2.58
Concrete Culvert 30ft long 48in dia. 4ft deep
Asset# 10000105

ROUTE: 400

Features Photographs



Photo: HUBA_C4_1686 Route: 400-004-2.58
Concrete Culvert 30ft long 48in dia. 4ft deep
Asset# 10000105



Photo: HUBA_C4_1684 Route: 400-004-2.58
Begin Section



Photo: HUBA_C4_1687 Route: 400-004-3.02
Metal WCS Flashboard Riser 30ft long 24in dia. 1ft deep
Asset# NA



Photo: HUBA_C4_1688 Route: 400-004-3.02
Metal WCS Flashboard Riser 30ft long 24in dia. 1ft deep
Asset# NA



Photo: HUBA_C4_1689 Route: 400-004-3.13
Plastic WCS Flashboard Riser 40ft long 24in dia. 2ft deep
Asset# NA



Photo: HUBA_C4_1690 Route: 400-004-3.13
Plastic WCS Flashboard Riser 40ft long 24in dia. 2ft deep
Asset# NA 8-009

ROUTE: 401

Features Photographs



Photo: HUBA_C4_1698 Route: 401-001-0.0
Begin Section



Photo: HUBA_C4_1607 Route: 401-001-0.0
Metal Open Rail Gate
Asset# 10000122



Photo: HUBA_C4_1703 Route: 401-001-0.3
Wood Open Rail Gate
Asset# 10000122



Photo: HUBA_C4_1701 Route: 401-001-0.3
Concrete WCS Flashboard Riser 20ft long 1ft deep
5x10 Box Culvert Asset# 10036313



Photo: HUBA_C4_1702 Route: 401-001-0.3
Concrete WCS Flashboard Riser 20ft long 1ft deep
5x10 Box Culvert Asset# 10036313



Photo: HUBA_C4_1699 Route: 401-001-0.3
Concrete WCS Flashboard Riser 20ft long 1ft deep
5x10 Box Culvert Asset# 10036315

ROUTE: 401

Features Photographs



Photo: HUBA_C4_1700 Route: 401-001-0.3
Concrete WCS Flashboard Riser 20ft long 1ft deep
5x10 Box Culvert Asset# 10036315



Photo: HUBA_C4_1697 Route: 401-002-0.3
Begin Section



Photo: HUBA_C4_1695 Route: 401-002-0.7
Concrete WCS Flashboard Riser 20ft long 1ft deep
5x10 Box Culvert Asset# 10036309



Photo: HUBA_C4_1696 Route: 401-002-0.7
Concrete WCS Flashboard Riser 20ft long 1ft deep
5x10 Box Culvert Asset# 10036309



Photo: HUBA_C4_1693 Route: 401-002-0.76
Plastic WCS Flashboard Riser 25ft long 24in dia. 3ft deep
Asset# 10065099



Photo: HUBA_C4_1694 Route: 401-002-0.76
Plastic WCS Flashboard Riser 25ft long 24in dia. 3ft deep
Asset# 10065099 8-011

ROUTE: 401

Features Photographs



Photo: HUBA_C4_1704 Route: 401-003-0.31
Begin Section

ROUTE: 402

Features Photographs



Photo: HUBA_C4_1717 Route: 402-001-0.0
Begin Section



Photo: HUBA_C4_1718 Route: 402-001-0.55
Concrete WCS Other 25ft long 36in dia. 1ft deep
Unknown type Asset# NA



Photo: HUBA_C4_1719 Route: 402-001-0.55
Concrete WCS Other 25ft long 36in dia. 1ft deep
Unknown type Asset# NA



Photo: HUBA_C4_1720 Route: 402-001-0.77
Metal Open Rail Gate
Asset# 10000122



Photo: HUBA_C4_1721 Route: 402-002-0.74
Begin Section



Photo: HUBA_C4_1722 Route: 402-002-1.46
Metal WCS Flap Gate/Full-Round Riser 60ft long 48in dia.
10ft deep Asset# NA 8-013

ROUTE: 402

Features Photographs



Photo: HUBA_C4_1723 Route: 402-002-1.46
Metal WCS Flap Gate/Full-Round Riser 60ft long 48in dia.
10ft deep Asset# NA



Photo: HUBA_C4_1724 Route: 402-003-1.51
Begin Section



Photo: HUBA_C4_1725 Route: 402-003-2.14
Metal Open Rail Gate
Asset# 10000122

ROUTE: 403

Features Photographs



02/28/2012

Photo: HUBA_C4_1705 Route: 403-001-0.0
Begin Section



02/28/2012

Photo: HUBA_C4_1707 Route: 403-001-0.1
Concrete WCS Flashboard Riser 12ft long 1ft deep
5x10 Box Culvert Asset# 10036310



02/28/2012

Photo: HUBA_C4_1708 Route: 403-001-0.1
Concrete WCS Flashboard Riser 12ft long 1ft deep
5x10 Box Culvert Asset# 10036310



02/28/2012

Photo: HUBA_C4_1709 Route: 403-001-0.4
Concrete WCS Other 12ft long 1ft deep
5x10 Box Culvert Asset# 10061428



02/28/2012

Photo: HUBA_C4_1710 Route: 403-001-0.4
Concrete WCS Other 12ft long 1ft deep
5x10 Box Culvert Asset# 10061428



02/28/2012

Photo: HUBA_C4_1711 Route: 403-002-0.46
Begin Section

ROUTE: 403

Features Photographs



Photo: HUBA_C4_1712 Route: 403-002-1.13
Concrete WCS Other 25ft long 1ft deep
5x12 Box Culvert Asset# 10061429



Photo: HUBA_C4_1713 Route: 403-002-1.13
Concrete WCS Other 25ft long 1ft deep
5x12 Box Culvert Asset# 10061429



Photo: HUBA_C4_1714 Route: 403-003-1.43
Begin Section



Photo: HUBA_C4_1715 Route: 403-003-1.96
Concrete WCS Flashboard Riser 20ft long 1ft deep
6x10 Box Culvert Asset# 10036312



Photo: HUBA_C4_1716 Route: 403-003-1.96
Concrete WCS Flashboard Riser 20ft long 1ft deep
6x10 Box Culvert Asset# 10036312

Accident Summary

Number of Accidents Reported	Timespan of Accidents	Injuries	Fatalities
0	No Accidents to Report	0	0

APPENDIX

TABLE 1 - GENERAL FWS ROAD FUNCTIONAL CLASSIFICATION	
Class I	Principal Refuge Road (Public Roads) - Routes that constitute the main access route, main auto tour route, or thoroughfare for refuge visitors. These routes are accessible by 2WD vehicles. Routes are numbered from 10 to 99.
Class II	Connector Refuge Road (Public Roads) - Routes that provide circulation within the refuge. These routes can also provide access to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, education centers, etc. These routes are accessible by 2WD vehicles. Routes are numbered from 100 to 199.
Class III	Special Purpose Refuge Road (Public Roads) - Roads that provide circulation within special use areas such as campgrounds or public concessionaire facilities or access to remote areas of the refuge. These routes may not be 2WD accessible. Routes are numbered from 200 to 299
Class IV	Administrative Access Road (Administrative Roads) - Routes intended for access to administrative developments or structures such as maintenance offices, employee quarters, or utility areas. These routes are accessible by 2WD vehicles. These routes may restrict access to the general public. Routes are numbered from 300 to 399.
Class V	Restricted Road (Administrative Roads) - Routes normally closed to the public, such as maintenance roads, service roads, patrol roads, and fire breaks. These routes may be open to the public for a short period of time for a special use, such as hunting access. These routes may not be 2WD accessible. Routes are numbered from 400 to 499.

A refuge road system contains those routes within or giving access to a refuge or other unit of the FWS that are administered by the FWS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a refuge road is not based on traffic volumes or design speed, but on the intended use or function of that route

DESCRIPTION OF RATING SYSTEM

Rating Data is collected on four different surface types: Asphalt, Concrete, Gravel, and Native. The Utah LTAP Center's Remaining Service Life (RSL) system is used for all surface types. The RSL system is based on the Strategic Highway Research Program's (SHRP) Distress Identification Manual.

Asphalt Rating System

Data is collected on the following distresses and conditions:

- **Fatigue Cracking** - Interconnected cracks forming small irregular shapes.
- **Longitudinal Cracking** - Cracks running parallel with the roadway, in the direction of traffic.
- **Transverse Cracking** - Cracks perpendicular to the roadway, going across the lane or lanes.
- **Block Cracking** - Interconnected cracks forming large blocks.
- **Edge Cracking** - Cracks running along the edge of the pavement surface.
- **Patches** - Original surface repaired with new asphalt patch material.
- **Potholes** - Holes or depressions in the pavement.
- **Rutting** - surface depressions in the wheel paths.
- **Roughness** - Evenness of pavement for serviceability.
- **Drainage** - Ability of the road surface to drain water based on proper slope.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

Fatigue, longitudinal, transverse, block, and edge cracking, along with patching and potholes are rated on a 0 - 9 scale (0 = no distress, 9 = maximum distress). The rating given is based on the extent and the severity of the distress. Rutting, roughness, and drainage are rated on a 0 - 3 scale (0 = excellent, 3 = poor). Each distress type has given Remaining Service Life (RSL) values (in years) based on the rating for that particular distress. The distress with the rating resulting in the lowest RSL value is considered to be the governing distress. That value is then assigned as the RSL of the road segment.

Concrete Rating System

Data is collected on the following distresses and conditions:

- **Spalling of Joints** - Chipping, breaking, or cracking of slab edges
- **Joint Seal Damage** - Any damage or condition that enables materials or water to infiltrate into the joint from the surface.
- **Corner Breaks** - A portion of the slab separated by a crack that intersects the adjacent transverse and longitudinal joints, forming approximately a 45° angle to the direction.
- **Broken Slabs** - Faulting and/or cracking localized to individual slabs.

- **Faulting** – Difference in elevation across a crack or joint.
- **Longitudinal Cracking** – Cracks in the pavement running parallel to road.
- **Transverse Cracking** - Cracks in the pavement running perpendicular to the direction of traffic.
- **Patch Deterioration** – Faulting, settling, or cracking of previously placed patch
- **Map Cracking** – A series of cracks that extend only into the upper surface of the Slab

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

The rating procedure for concrete pavement is the same as that for asphalt pavement described previously. Each of the distresses described above are rated on the same 0 – 9 scale. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Gravel and Native Rating System

Data is collected on the following distresses and conditions:

- **Cross Section (Crown)** - Roadway built so that the center is higher than the shoulder, to prevent water from pooling on roadway.
- **Roadside Drainage** - Roadside ditches and culverts to handle water flow and prevent pooling on the roadside.
- **Corrugations (Washboarding)** - Small trenches or holes developing perpendicular to the roadway.
- **Potholes** - Holes or depressions in the roadway.
- **Rutting** - Depressions running parallel with the roadway, in the wheelpaths.
- **Dust** - Amount of dust caused by traffic.
- **Loose Aggregate (Gravel Only)** - Loose gravel, typically piled up on the roadway edges or centerline.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

The rating procedure for unpaved roads is the same as that for asphalt and concrete pavements described previously. Of the distresses described above, corrugations, potholes, rutting, and loose aggregate are rated on the same 0 – 9 scale previously mentioned. Cross section, roadside drainage, and dust are rated on the same 0 – 3 scale described for asphalt pavement. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Condition Descriptions by Surface Type

The following definitions are used to describe pavement condition for the various surface types. These are general guidelines for condition indications.

Asphalt

Excellent – Recently constructed or overlaid road where construction or overlay was performed correctly- No maintenance required. RSL = 19-20 years.

Good – Low extent longitudinal and transverse cracks. All cracks are 1/4" or less with little or no crack erosion. Patches are in good condition and applied correctly. Routine Maintenance recommended. RSL = 13-18 years.

Fair - Roads are in good structural condition with little or no fatigue cracking. Longitudinal, transverse, and edge cracking is at medium extent and severity. Block cracking is not extensive. Any patches are in good condition. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Road beginning to show signs of structural distress. Fatigue cracking is medium to high extent and medium severity. Cracking will be severe. Surface may have severe block cracking and show. Patches are in fair to poor condition. There is moderate distortion or rutting and occasional potholes. Rehabilitation recommended. RSL = 1-6 years.

Failed - Road is severely deteriorated. Signs of structural failure appear along with severe and extensive fatigue cracking, distortion, potholes, or extensive patches in poor condition. Reconstruction recommended. RSL = 0 years.

Concrete

Excellent - New pavement. No maintenance required. RSL = 19-20 years

Good - First signs of transverse cracking, patch or repair, more extensive pop-outs, or scaling. Sealing or routine maintenance recommended. RSL = 13-18 years.

Fair – Pavement has joint or crack spalling, and/or faulting, along with cracking at corners with broken pieces. Any Patches are in fair condition and faulting is at a minimum. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Joints and cracks are open 1 inch, spalled, or patched. Faulting is more severe. Rehabilitation recommended. RSL = 1-6 years.

Failed - Most slabs have failed structurally, and faulting is severe. Reconstruction recommended. RSL = 0 years.11-9

The following table shows the relationship between RSL and condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Asphalt and Concrete Pavements)								
	FAILED	POOR		FAIR		GOOD		EXCELLENT
RSL Years	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20

Gravel and Native

Note - Native surfaces do not have a gravel layer.

Excellent - Newly constructed road that has been constructed properly with proper crown, drainage and gravel layer. Little or no distress. No maintenance recommended. RSL = 8-10 years.

Good - Crown, drainage provisions, and gravel layer are in good condition. Distress limited to traffic effects such as dust, loose aggregate, and low severity corrugations (wash boarding). RSL = 5-7 years.

Fair - Adequate drainage and crown through majority of roadway. Crown repair, ditch improvement may be necessary. Road has more severe corrugations and potholes. Preventative maintenance recommended. RSL = 3-4 years.

Poor - Travel at slow speeds is necessary. Additional gravel layer needed to carry traffic. Poor crown. Ditching is inadequate and rutting is extensive and severe. Rehabilitation recommended. RSL = 1-2 years.

Failed - Travel is difficult, and road may be closed at times. Rutting and Corrugations are very severe. Total Reconstruction of road is recommended. RSL = 0 years.

The following table shows the RSL values for gravel and native roads in terms of excellent, good, fair, poor, and failed condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Gravel and Native Surfaces)					
	FAILED	POOR	FAIR	GOOD	EXCELLENT
RSL Years	0	1-2	3-4	5-7	8-10

NATIVE PRIMITIVE/IMPROVED RATING SHEET

Cross Section (Crown)*

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

Rutting

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

Roadside Drainage*

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

Potholes

Severity	Extent (Area)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

Corrugations

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 3"	1	2	3
	Med 3-6"	4	5	6
	High > 6"	7	8	9

* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

GRAVEL RATING SHEET

Cross Section (Crown)

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

Rutting

Severity	No Defects	Extent (Length)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

Roadside Drainage

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

Potholes

Severity	No Defects	Extent (Area)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

Corrugations

Severity	No Defects	Extent (Length)		
		Low <10%	Med 10-30%	High >30%
	Low < 2"	1	2	3
	Med 2-4"	4	5	6
	High > 4"	7	8	9

* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

Loose Aggregate

Severity	No Defects	Extent (Area)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

ASPHALT RATING SHEET

Fatigue Cracking

		Extent		
		Low 1 crack WP	Med 2 cracks WP	High >30% length
Severity	No Defects			
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Edge Cracking

		Extent (Length)		
		Low <10%	Med 10-30%	High >30%
Severity	No Defects			
	0-6" from curb	1	2	3
	6-18" from curb	4	5	6
	> 18" from curb	7	8	9

Longitudinal Cracking

		Extent		
		Low 1 crack full length	Med 2 cracks full length	High >2 cracks full length
Severity	No Defects			
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Block Cracking

		Extent (Length)		
		Low > 15x15' squares	Med 15-10' squares	High <10x10' squares
Severity	No Defects			
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Transverse Cracking

		Extent (ft between cracks)		
		Low > 200'	Med 200-50'	High < 50'
Severity	No Defects			
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Utility Cuts

		Extent (Length)		
		Low <10%	Med 10-30%	High >30%
Severity	No Defects			
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Drainage/Roughness/Rutting

		Condition	Description
		Severity	No Defects
Minor Defects	1		Drainage may be obstructed, < 1" rutting, minor roughness.
Moderate Defects	2		Poor drainage, 1-2" rutting, noticeable roughness, potholes < 6" wide.
Major Defects	3		No drainage; > 2" rutting; potholes 6-12" wide create roughness requiring reduced speeds.

CONCRETE RATING SHEET

Spalling of Joints				
Extent (% joints)				
	No Defects	Low <10%	Med 10-20%	High >20%
Severity	Low Spalls < 3"	1	2	3
	Med Spalls 3-6"	4	5	6
	High Spalls > 6"	7	8	9

Broken Slabs				
Extent (% slabs)				
	No Defects	Low <5%	Med 5-15%	High >15%
Severity	Low-no more than 3 pieces, no spalling/faulting	1	2	3
	Med-broken into >3 pieces, spalling/faulting <1/4"	4	5	6
	High-4 or more pieces, spalling/faulting >1/4"	7	8	9

Transverse Cracks				
Extent (% slabs)				
	No Defects	Low <10%	Med 10-20%	High >20%
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/4"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/4"	7	8	9

Joint Seal Damage				
Extent (%joints)				
	No Defects	Low <10%	Med 10-20%	High >20%
Severity	Low <10% joint length	1	2	3
	Med 10-50% joint length	4	5	6
	High >50% joint length	7	8	9

Faulting				
Extent (Length)				
	No Defects	Low <10%	Med 10-30%	High >30%
Severity	Low < 1/2"	1	2	3
	Med 1/2-1"	4	5	6
	High > 1"	7	8	9

Patch Deterioration				
Extent (Area)				
	No Defects	Low <10%	Med 10-30%	High >30%
Severity	Low-no fault, no settle at perimeter	1	2	3
	Med-fault & settle <1/4" at perimeter	4	5	6
	High-fault & settle >1/4" at perimeter, cracked patch	7	8	9

Corner Breaks				
Extent (% of slabs)				
	No Defects	Low <10%	Med 10-20%	High >20%
Severity	Low-corner cracks, no spalling or faulting	1	2	3
	Med-crack slightly spalled & faulted <1/4"	4	5	6
	High-crack highly spalled & faulted >1/4"	7	8	9

Longitudinal Cracks				
Extent (% slabs)				
	No Defects	Low <10%	Med 10-20%	High >20%
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/2"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/2"	7	8	9

Map Cracks				
Extent (Area)				
	No Defects	Low <10%	Med 10-20%	High >20%
Severity	Low-small connected cracks, no spalling	1	2	3
	Med-connected cracks, no spalling	4	5	6
	High-large connected cracks with surface spalling	7	8	9

Deficiency Ratings With Associated Remaining Service Life

Asphalt Rating Sheet

Fatigue Cracking		Edge Cracking		Transverse Cracking		Utility Cuts	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20	0	20
1	10	1	12	1	14	1	14
2	8	2	10	2	12	2	12
3	6	3	8	3	10	3	10
4	8	4	10	4	12	4	12
5	6	5	8	5	10	5	10
6	4	6	6	6	8	6	8
7	6	7	8	7	10	7	10
8	2	8	6	8	6	8	6
9	0	9	4	9	2	9	2

Longitudinal Cracking		Block Cracking		Drainage/Roughness/Rutting	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	14	1	12	1	16
2	12	2	10	2	10
3	10	3	8	3	4
4	12	4	10		
5	10	5	8		
6	8	6	6		
7	10	7	12		
8	8	8	6		
9	6	9	2		

Concrete Rating Sheet

Spalling		Broken Slabs		Transverse Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	15	1	15	1	18
2	12	2	12	2	15
3	10	3	10	3	12
4	12	4	12	4	15
5	10	5	10	5	10
6	8	6	8	6	6
7	10	7	10	7	10
8	6	8	6	8	4
9	0	9	0	9	0

Joint Seal Damage		Faulting		Patch Deterioration	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	18
1	16	1	15	1	16
2	14	2	12	2	14
3	12	3	10	3	12
4	14	4	12	4	12
5	10	5	8	5	10
6	8	6	6	6	8
7	12	7	10	7	10
8	8	8	4	8	6
9	6	9	0	9	0

Corner Breaks		Longitudinal Cracks		Map Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	18	0	20	0	20
1	16	1	18	1	18
2	14	2	15	2	15
3	12	3	12	3	12
4	12	4	15	4	12
5	10	5	10	5	10
6	8	6	6	6	6
7	10	7	10	7	10
8	6	8	4	8	4
9	0	9	0	9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Asphalt & Concrete Roads)

RSL	FAILED 0	POOR 1 - 6	FAIR 7 - 12	GOOD 13 - 18	EXCELLENT 19 - 20
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Deficiency Ratings With Associated Remaining Service Life

Native Primitive Improved Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

Gravel Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

Loose Aggregate	
Distress Rating	Remaining Service Life
0	10
1	9
2	8
3	7
4	8
5	7
6	6
7	5
8	3
9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Gravel & Native Roads)

RSL	FAILED	POOR	FAIR	GOOD	EXCELLENT
	0	1 - 2	3 - 4	5 - 7	8 - 10